



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,160	01/20/2004	Darren Shakib	305335.01	3220
22971	7590	09/19/2007		
MICROSOFT CORPORATION ONE MICROSOFT WAY REDMOND, WA 98052-6399			EXAMINER RAYYAN, SUSAN F	
			ART UNIT 2167	PAPER NUMBER
			NOTIFICATION DATE 09/19/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

roks@microsoft.com
ntovar@microsoft.com
a-rydore@microsoft.com

Office Action Summary

Application No.

10/761,160

Applicant(s)

SHAKIB ET AL.

Examiner

Susan F. Rayyan

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 2, 2007 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

DETAILED ACTION

3. Claims 1-27 are pending.

Claim Rejections - 35 USC § 112

4. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The independent claims are indefinite as the limitation claims that the infrequent words are identified as those **words that occur in less than a threshold number of documents** and as those **words queried less often than a frequent word**. There are two different standard for determining if a word is to be considered an infrequent word

Art Unit: 2167

(words that occur in a few documents are considered more rare than words that occur in many more documents) and (words queried less often than other words).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11, 13-25,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 6,070,158 issued to Steven T. Kirsch et al ("Kirsch") and US 6,772,141 issued to John P. Pratt et al ("Pratt").

As per claim 1 Kirsch teaches:

an infrequent word identifier that identifies infrequent words that occur in less than a threshold number of documents (see column 2, lines 25-32, 47-53);

a frequent word index that maps the location of documents that contain words that occur in more than the threshold number of documents (column 10, lines 30-35, 40-45, stop list and part of record);

an infrequent word index, maintained separately from the frequent word index, that maps the location of documents that contain the infrequent words (column 2, lines 45-54 and column 6, lines 64-67);

Art Unit: 2167

an index scanning component that, in response to a query containing an infrequent word, scans the infrequent word index to find the location of documents containing the infrequent word (column 2, lines 27-30, 47-50).

Kirsh does not explicitly teach an infrequent word being a word queried less often than a frequent word. Pratt does teach this at Figure 3 (search decision table) as queries access to the row and column 6, lines 39-53 for organizing and using indexes. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kirsh with infrequent word being a word queried less often than a frequent word for organizing and using indexes as described by Pratt (column 2, lines 13-16).

As per claim 2, same as claim arguments above and Kirsch teaches:

wherein the frequent word index is stored by document (column 10, lines 40-45).

As per claim 3, same as claim arguments above and Kirsch teaches:

wherein the frequent word index is partitioned by document (column 10, lines 40-45).

As per claim 4, same as claim arguments above and Kirsch teaches:

wherein the frequent word index is distributed across multiple computing systems (column 6, lines 64-66).

Art Unit: 2167

As per claim 5, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored by document(column 6, lines 33-38).

As per claim 6, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is partitioned by document(column 6, lines 33-38).

As per claim 7, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is distributed across multiple computing computer systems (column 6, lines 64-66).

As per claim 8, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored by word (column 10, lines 20-26).

As per claim 9, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is partitioned by word (column 10, lines 20-26).

As per claim 10, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored on a single computing computer system (column 6, lines 64-66).

Art Unit: 2167

As per claim 11, same as claim arguments above and teaches:

wherein the index scanning component, in response to a user query containing an infrequent word, retrieves document locations for documents having the infrequent word from the infrequent word index (column 2, lines 27-30,47-50) and transmits the retrieved document locations to computer systems containing frequent word indexes for the retrieved documents (column5, lines 19-27).

As per claims 13,18 Kirsch teaches:

scanning the set of documents and gathering infrequent words that occur fewer times than a threshold number of the set of documents(see column 2, lines 25-32, 47-53);
constructing an infrequent word index that maps infrequent words to locations of documents that contain the infrequent words(column 2, lines 45-54);
constructing a frequent word index, separately maintained from the infrequent word index, that maps frequent words that occur in a number of documents of the set of documents that is greater than the threshold amount to locations of documents that contain the frequent words(column 10, lines 30-35, 40-45, stop list and part of record and column 6, lines 64-67);
and examining the terms in the user query to identify any terms are infrequent words;
and searching the infrequent word index for the terms that are identified as infrequent words(column 2, lines 27-30,47-50).

Kirsh does not explicitly teach an infrequent word being a word queried less often than a frequent word. Pratt does teach this at Figure 3 (search decision table) as queries

Art Unit: 2167

access to the row and column 6, lines 39-53 for organizing and using indexes. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kirsh with infrequent word being a word queried less often than a frequent word for organizing and using indexes as described by Pratt (column 2, lines 13-16).

As per claim 14, same as claim arguments above and Kirsch teaches:

comprising storing the infrequent word index in a dedicated computer system(column 6, lines 64-66).

As per claim 15, same as claim arguments above and Kirsch teaches:

comprising storing the infrequent word index in dedicated partitions on computer systems that also store the frequent word index (column 6, lines 64-66).

As per claim 16, same as claim arguments above and Kirsch teaches:

comprising storing the infrequent index by word. (column 10, lines 20-26).

As per claim 17, same as claim arguments above and Kirsch teaches:

comprising storing the infrequent index by document(column 6, lines 33-38).

As per claim 19 Kirsch teaches:

identifying infrequent words that occur in less than a threshold number of documents(see column 2, lines 25-32, 47-53);

Art Unit: 2167

mapping, in a frequent word index, the location of documents that contain words that occur in more than the threshold number of documents in a frequent word index(column 10, lines 30-35, 40-45, stop list and part of record);

maintaining, separately from the frequent word index, an infrequent word index that maps the location of documents that contain the infrequent words(column 2, lines 45-54 and column 6, lines 64-67);

in response to a query containing an infrequent word, scanning the infrequent word index to find the location of documents containing the infrequent word(column 2, lines 27-30, 47-50).

Kirsh does not explicitly teach an infrequent word being a word queried less often than a frequent word. Pratt does teach this at Figure 3 (search decision table) as queries access to the row and column 6, lines 39-53 for organizing and using indexes. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kirsh with infrequent word being a word queried less often than a frequent word for organizing and using indexes as described by Pratt (column 2, lines 13-16).

As per claim 20, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored by document(column 6, lines 33-38).

As per claim 21, same as claim arguments above and Kirsch teaches:
wherein the infrequent word index is partitioned by document(column 6, lines 33-38).

As per claim 22, same as claim arguments above and Kirsch teaches:
wherein the infrequent word index is distributed across multiple computing computer
systems(column 10, lines 20-26).

As per claim 23, same as claim arguments above and Kirsch teaches:
wherein the infrequent word index is stored by word (column 10, lines 20-26).

As per claim 24, same as claim arguments above and Kirsch teaches:
wherein the infrequent word index is partitioned by word (column 10, lines 20-26).

As per claim 25, same as claim arguments above and Kirsch teaches:
wherein the infrequent word index is stored on a single computing computer
system(column 6, lines 64-66).

As per claim 27 Kirsch teaches:
means for scanning the set of documents and gathering infrequent words that occur in
a number of documents that is less than a threshold amount; means for constructing an
infrequent word index that maps infrequent words to locations of documents that contain
the words(see column 2, lines 25-32, 47-53);

Art Unit: 2167

means for constructing a frequent word index, separately maintained from the infrequent word index, that maps frequent words that occur in a number of documents that is greater than the threshold amount to locations of documents that contain the frequent words(column 10, lines 30-35, 40-45, stop list and part of record and column 6, lines 64-67);

and means for examining the terms in the user query to identify any terms are infrequent words and means for searching the infrequent word index for the identified infrequent words (column 2, lines 27-30,45-54 and column 6, lines 64-67).

Kirsh does not explicitly teach an infrequent word being a word queried less often than a frequent word. Pratt does teach this at Figure 3 (search decision table) as queries access to the row and column 6, lines 39-53 for organizing and using indexes. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kirsh with infrequent word being a word queried less often than a frequent word for organizing and using indexes as described by Pratt (column 2, lines 13-16).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirsch and US 6,772,141 issued to John P. Pratt et al ("Pratt") as applied to claims 1, 19 above, in view of US Patent Application Publication Number 2002/0032772 issued to Bjorn Olstad ("Olstad").

As per claim 12, same as claim arguments above and Kirsch and Pratt do not explicitly teach an index cache. Olstad does teach a index cache (paragraph 85, lines 1-4) to improve relevancy in search services (paragraph 18). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Kirsch and Pratt with an index cache to improve relevancy in search services as described by Olstad (paragraph 18).

As per claim 26, same as claim arguments above and Kirsch and Pratt do not explicitly teach including an index cache. Olstad does teach a index cache (paragraph 85, lines 1-4) to improve relevancy in search services (paragraph 18). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Kirsch and Pratt with an index cache to improve relevancy in search services as described by Olstad (paragraph 18).

Art Unit: 2167


Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan F. Rayyan whose telephone number is 571-272-1675. The examiner can normally be reached on M-F, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Susan Rayyan
9/13/2007


JOHN COTTINGHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100